Drexel University IT Strategic Agenda Issues and Directions

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IT Strategic Agenda Update

Drexel University

Philadelphia, Pennsylvania
October 2012

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Information Resources & Technology Mission and Vision

- ***Mission***
  Provide excellence in technology based infrastructure, services and programs to advance Drexel's living, learning, and working environment
- ***Vision***
  Work collaboratively to enable the success of all university stakeholders

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Technology Strategy

- Focus on Technology that is Core to the Institution vs. simply interesting
- Purchase - Utilize Vendors with market share
  - "pure vanilla" product implementation key to controlling cost, complexity and fragility
- Projects Cost More than Products
  - Self Develop – most expensive, longest time line
  - Open Source – possibly second most expensive
  - Best of Breed – integration becomes a "project"
  - Consortia – high "process" overhead, long time lines – may be more expensive than self develop

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Technology Strategy

- Consistent architecture & integration critical
- Conduct "proof of concepts" in actual environment when feasible
- Commit at the beginning of a "break thru" cycle when risks are low
- Rapid rollout required for Strategic Advantage; otherwise just a commodity*
- Recognize the move from Assets to Access
- Must be affordable

* Source: IT Doesn't Matter, Nicholas Carr, HBR, May 2003

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Balancing Issues

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Enterprise System Issues

- How do you...
  - Align the IT organization to facilitate business enterprise strategic goals?
  - Move from “what you have” to “what you want”?
  - Set priorities, “sunset” applications?
- What...
  - Is the management model?
    - In-house? Outsource? ASP? Hybrid?
  - Systems and data must be centralized?
  - Level of security is appropriate?
- Who owns/has access to data, applications?

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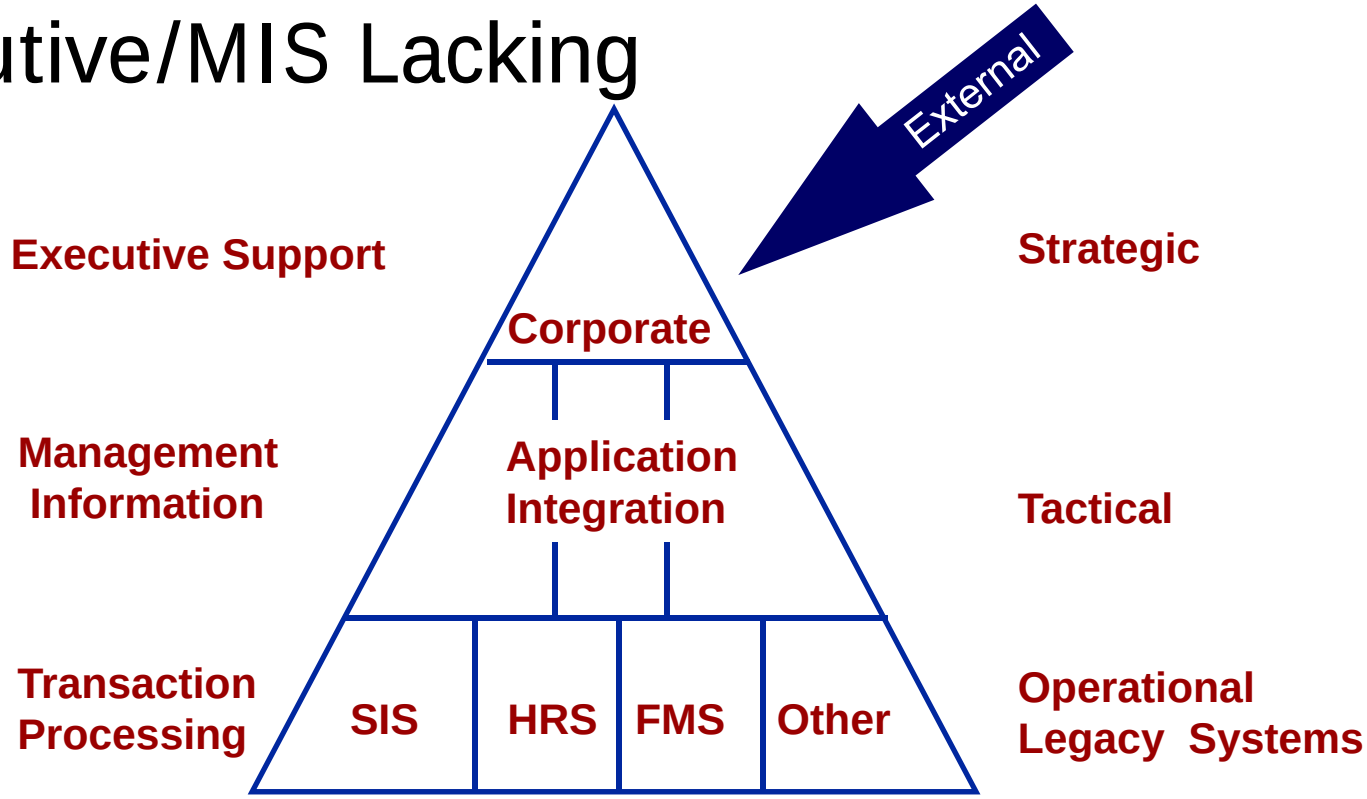
Historic Enterprise MIS Focus

- Custom Development
- Independent Applications
- In-House Integration
- Executive/MIS Lacking



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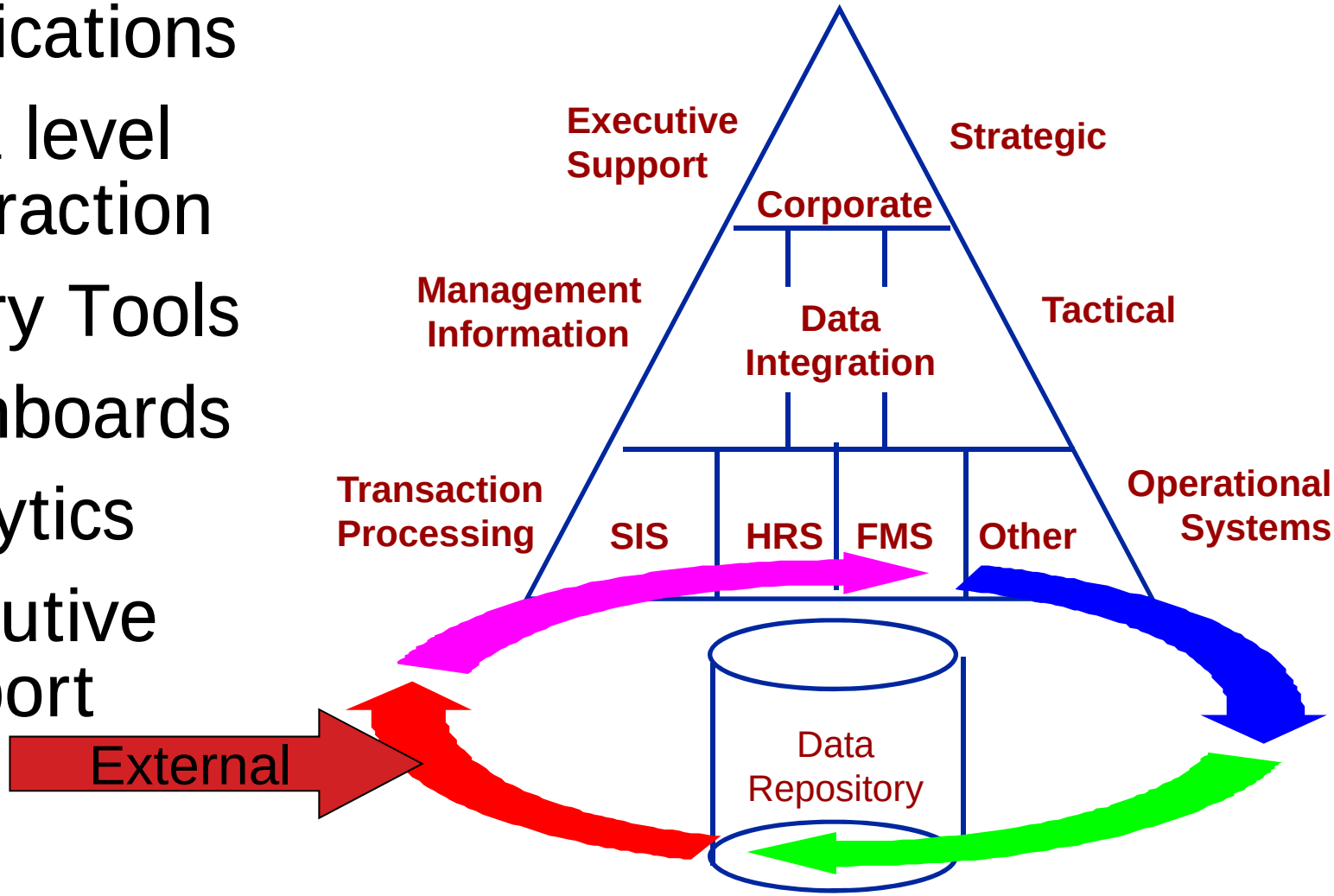
Current MIS Focus

- Purchased Applications
- Data level Abstraction
- Query Tools
- Dashboards
- Analytics
- Executive support



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Future Focus – Use Technology to Improve Productivity and Access

- Browser/Server applications the norm
- Web commerce – c : b and b : b
- Content Management a growing challenge
- Wireless access everywhere
- Personal ownership of computing and communications devices
  - "Laptop universities" are dead
  - "Choice" the new paradigm - BYOD

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Customer-Focused Services

- Use of portals as entry to the digital campus
  - Single sign-on, role-based identity management
  - "Micro customization", smart push, auto-agents
- Mobility and Mobile Apps a must
- Emphasis on "personalization" and interaction
  - Provision of Information for customer decisions
    - Vendors (AP), Students (Books), Faculty (Advising)
- External web services change business
  - Purchasing & Accounts Payable – Credit Cards/Vendors
  - Travel, Benefit Administration, Financial Aid

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Academic Issues

- How do you...
  - Align the IT organization to facilitate academic strategic goals?
  - Minimize duplication of cost and effort?
  - Handle organizational equity problems?
  - Handle security, backup, and system integration in a distributed computing environment?
  - Transform the historical culture to prevent compartmentalization of efforts?
  - Utilize technology to transform Teaching and Learning?

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Teaching & Learning Futures – Recognize Next-Generation Learning Styles

- Today's 14 year old is tomorrow's Freshman
- Don't know life without computers or Internet
- The Internet is better than watching TV
- Doing is more important than knowing
- Learning shifting from studying to gaming
- Multitasking is a way of life
- Being connected is essential
- Zero tolerance for delays

Source: Understanding the New Students; Diana Oblinger 2003

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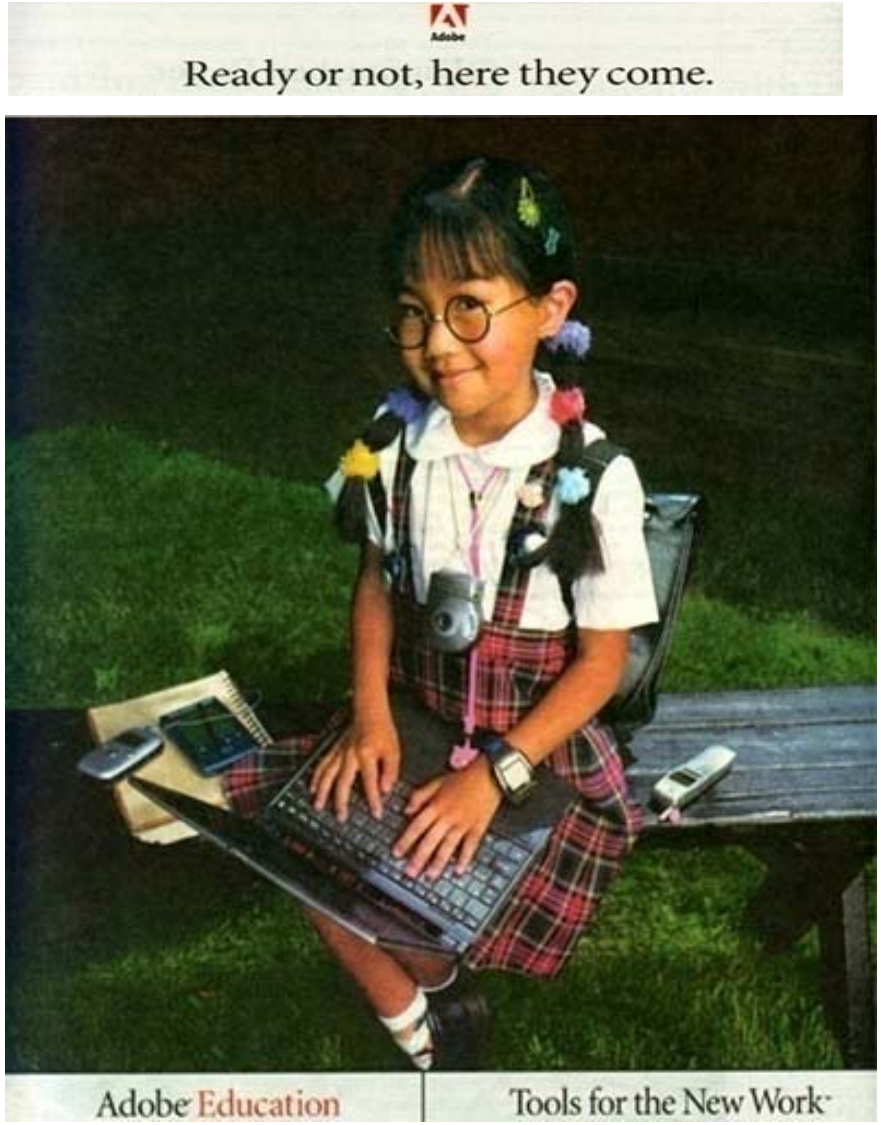
Tomorrow's Typical Student



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"14 Year Old Japanese Girls Rule the World"

Mann, Yahoo! Internet Life, August 2001

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Are You Ready?

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Teaching & Learning Futures

- Student Centered vs. Curriculum Centered
  - The “my” generation
  - “Just in Time”, “Just for Me” learning
  - Individualized, Adaptive “on the fly”
- Growing emphasis on Collaborative learning
- Faculty support via Course Management Systems and an Enterprise wide Architecture
- Multimedia integration of lecture materials
- Lab Migration to ubiquitous access –BYOD
- Mobility and Mobile Apps a Must

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Teaching & Learning Futures

- Faculty and student electronic interaction
  - Hybrid or Blended courses
  - Class assignments and work
  - Administrative support and advising
  - Blogs, “my media”
  - IM/SMS is in, email is out
  - Social Networks
  - Students teaching Students – P2P
- Flexible coursework and credit options
- Synchronous and asynchronous learning
- Leverage Technology – Reduce Unit Cost

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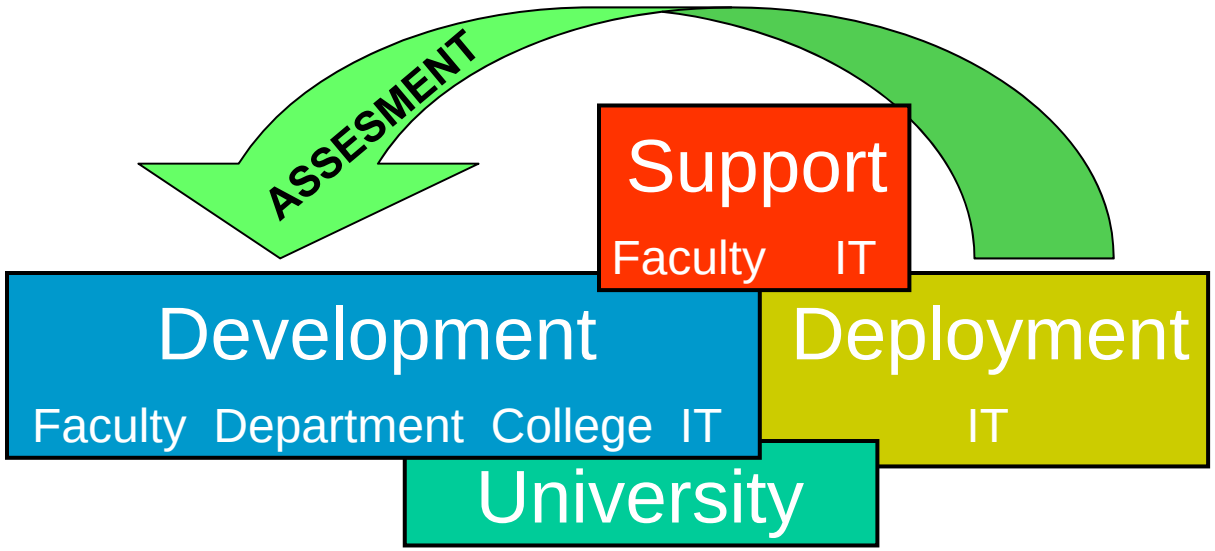
A Teaching and Learning Enterprise Support Paradigm



- Instructional design
- Content
- Context
- Quality

- Marketing
- Administration
- Registration
- SAR

- Enterprise IT Architecture
- Infrastructure
- Redundancy
- Standards

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Strategies for Leveraging Learning Technology

- Combine multiple sections of a course into one large section
- Focus on the low hanging fruit – 44% of all students take the same 25 courses*
- Emphasize student-to-student interactions
- Utilize a “Flipped” classroom strategy
- Automate grading and student feedback
- Use a differentiated personnel strategy

*Source: Expanding Access to Learning; Carol Twigg, 2003

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Strategies for Leveraging Learning Technology

- Center e-learning infrastructure responsibility with the IT organization
- Select vended Learning Management System(s)
  - Choice is not always bad
- "Vendors ability to execute is key selection criteria, not functionality"
- "out of the box" integration with the SIS and other ERP systems critical to productivity

Source: Gartner Higher Education E-Learning Survey Review, 2004

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Strategies for Leveraging Learning Technology – MOOC's

- Use MOOC's and Open Content Disruption to Institutional Business Advantage
- Control Awarding of Course "Credit"
  - Provide Institutional Badge and Certificate Evaluation Mechanism for credit
  - Articulate Award Transfer Credit Rules
  - Provide Differential Pricing Structure for Transfer
  - Consider ePortfolios as the Next Transcript
- Examine course "licensing" opportunities
- Leverage MOOC's as a free library for course content

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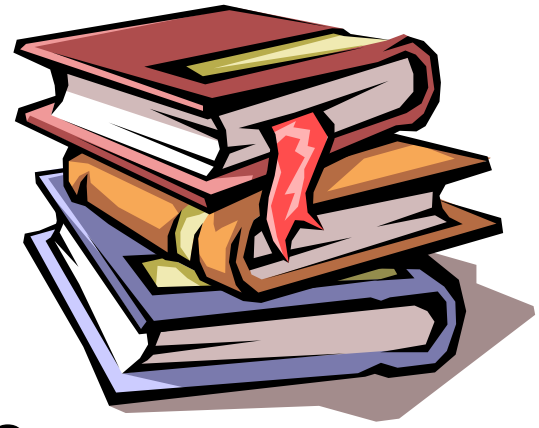
Library Issues

- What is the role of print media in a digital network centric learning environment?
- Ramifications of the move from the "physical" to the "virtual" world?
- How do you shift from Warehousing Print to Knowledge Management?
- How do you avoid becoming a museum of books?



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Academic Libraries have passed a Significant Turning Point

The “Googlization” of print collections...Means that for the first time in their history, libraries may be able to contemplate a future without adding more shelf space... It may now be possible to consider transitioning libraries from...the storage of books to primarily supporting learning.*

*Source: *Campus Learning Spaces: Investing in How Students Learn*, Acker and Miller, ECAR, April 2005

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Library Future Focus - Access

- Change in staff roles, skills and mentoring
  - Management of “Big Data”
  - Information scholarship and literacy skills
- Wireless browsing – Anytime, Anywhere
- Manage Relationships with publishers
  - Copyright permissions, fair use, charging
- Provide a focus for Learning Resources
  - The Learning Commons
- The future Student Union?
  - House more students, less print media

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Technology Infrastructure Issues

- Multiple standards vs. lack of standards
  - Server architecture, OS, database, etc
- Redundant systems or clustered systems
- Storage fragmentation and management
- Backup challenges: time and space
- Leveraging cloud based capabilities

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Technology Infrastructure Future Focus

- M+1 designs: Microsoft plus another vendor
  - Windows Server + some flavor of vended "*ix"
  - SQL Server + Oracle
- Simpler servers; smarter software
  - Scaling out for redundancy and performance
  - Virtualization
- Storage as a utility
  - Virtualized SANs here now; multi-vendor soon
- Multiple locations and copies guarantee backup quality

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Networking Infrastructure Issues

- What kind of wiring plan do you adopt for inter- and intra-building? Wireless strategy?
- What level of integration do you implement between voice, data and video?
- What are your communications standards?
- How do you handle communications for faculty and students off campus?
- What level of support is provided in Residence Halls?

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Networking Future Focus

- Increasing bandwidth – multi-gigabit speeds
- Multimedia integration – voice, data, video
- Wireless/mobile Access technology
- Instant Messaging, Peer-to-Peer applications
- Unified Messaging – email - voice mail – fax
- Network Management and Security
  - Growing need for security professionals as a part of university computing centers

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Structural Issues – Culture & Strategy

Academic IT Culture

- Interesting - Not Strategic
- Often Innovative
- Result of Individual Initiative
- Sense of Ownership
- Unique – Invented Here Crucial
- Open Source is Free
- Funded via Grants, Contracts
- Reliability & Support Lacking
- Limited Impact
- Non Integrated
- A "project" of the Academic Enterprise or Research Community

Enterprise IT Culture

- Core – Sometimes Strategic
- Seldom Innovative
- Result of Institutional Initiative
- Fragmented Ownership – ERP
- Commodity – NIH is Good
- Open Source is Expensive
- Central Funded
- Reliable, Redundant & Supported
- University-wide Impact
- Integrated key
- Core Utility "product" such as ERP, LMS, Portal, Library, Email, CMS Systems or Network Services

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Structural Issues – Culture & Strategy Futures

- Define the relationship between central and distributed responsibilities
- Centralize infrastructure management
  - Network, server farm, core academic and administrative applications (enterprise systems), focus on system and data integration
  - Widely used licenses
- Decentralize content creation responsibility
  - Web information
- "Fuzzy" boundaries in between
  - Desktop applications, specialized labs, departmental applications

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Structural Issues – Culture & Strategy Futures

- Leverage Central Services – Don't compete
  - Nearly 40% of DR1 IT funding is decentralized*
- Use or Provide Cloud services as needed
- Use market share to adopt a family of Supported Products; reduce complexity
  - Software applications, licenses
- Adopt an IT Architecture and "stick to it"
  - IT architecture & infrastructure is 1st priority**

* EDUCAUSE Core Data Service Summary, Hawkins, Rudy, Madsen, 2004

** CIO Insight, Top 30 Trends 2006, Ziff Davis Media, January 2006

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Drexel's Supported ERP Products

*Product**	*Market Share Rank/% DR1**
Student - SGHE	1 – 48%
Finance - SGHE	1 – 36%
HR - SGHE	2 – 30%
Development – SGHE	1 – 51%
Library – Innovative	2 – 28%
Course Mgt – Bb/Bb Learn	1 – 67%
Grant Mgt – SGHE/COEUS	2 – 27%
▫ Homegrown 1st with 35%	

* Source: *EDUCAUSE Core Data Service, Summary Report*, September 2007

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Moving Forward - Leadership and Delivery a Must

- Leadership and Executive Support is Critical
- Delivering results in Internet time is Strategic
- Use of Cloud-based Services Providers
- Time-consuming, process-oriented steering and advisory structures are out
- Market Share and “built-in” IT integration are in
- Effectiveness is more important than Efficiency

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Who's Making Your Enterprise IT Decisions?

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Internet has Changed the Game

- IT has tactical implications for most institutions, strategic implications for a few
- Time-to-market is critical for strategic advantage
  - Telephone to 50 million users took 74 years*
  - Blogs to 50 million users took 1 year*
- Is an IT-intensive project worth doing if it takes more than 6 months?
- What IT planning is worth doing if the horizon is more than one year?

* Source: Information Technology Considerations for the Research Environment, McKinney, ECAR Symposium, July 2005

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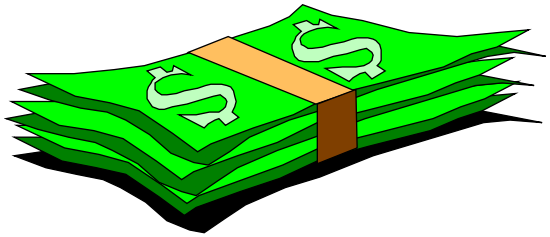
Financial Issues

Alternatives

- Central funding – Top slicing
- Self support-market

Technology Cycle

- Strategic/Quick Adoption/Innovation
- Mature/Commodity



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Strategic Assumptions

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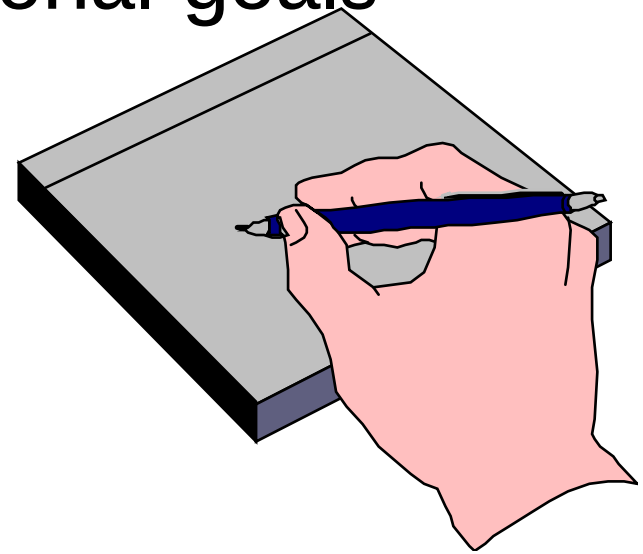
The Importance of a Strategy

An achievable, short term, “Strategic IT Agenda” founded on core assumptions, along with ongoing academic and business enterprise fine tuning processes re next IT initiatives and priorities are critical to aligning the University’s Information Technology Strategy with institutional goals



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Some IT Strategic Assumptions

- IT Planning Time Horizon is focused on the near term*
  - Master Plan – 15-20 years
  - Business Plan – Rolling 5 years
  - Capital Plan – 10 years
  - Campaign Plan – 5-7 years
  - Annual Budget – 1 year
  - Technology Plan – 1-3 years – A rolling agenda based on ongoing academic and business input

* Source: Dennis S. Ransmeier, Big Picture Planning, Business Officer, NACUBO ,March 2004

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Some IT Strategic Assumptions

- Functional users “own” ERP applications
- EIS/MIS “bottleneck” broken by empowering functional users
  - Data abstraction via repositories, warehouses, marts, query tools, dashboards
- IT mission will shift toward providing services independent of the institutional environment
  - On-demand, live, web based, e.g. Yahoo and Google

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IT Strategic Assumptions

- IT Infrastructure is always on
- Increased focus on maintaining stability of the institution's architecture and infrastructure
- Skills and Internet time will dictate strategy
  - "Close follower" on major high stakes projects
  - "Early adopter" when failure has minimal penalty
  - Use of "proof of concept" pilots and prototypes
  - Rapid Rollout at "break-thru" product cycles

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IT Strategic Assumptions

- The Cloud is a viable option for outsourcing and providing many application services
- IT management will shift toward a system integrator paradigm
- Integration is a key decision factor as technology commoditization increases
- Market share and purchased systems are in
- Customization is out

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IT Strategic Assumptions

- Understanding the Next Generation's expectations critical – "wired and tired" *
- Traditional students remain core; although
- 75% of today's enrollments are non-traditional with 35% of UG's average age of 38**
- A mobile, ubiquitous environment a must

* Source: Jeanette Cureton, 2002 ECAR Symposium

** US Department of Education, NCES, The Condition of Education 2002

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IT Strategic Assumptions

- IT costs, complexity, security, & fragility will increase resulting in pressure for centralized planning, management, and leadership
- Rapid network and storage growth increase pressure for centralized management
  - Computing power doubles every 18 months
  - Storage power doubles every 12 months
  - Communications power doubles every 9 months
- Support for central IT "innovation" will likely decrease, particularly at doctoral institutions*

* Source: Information Technology Leadership in Higher Education; Katz et al; ECAR Research Study, 2004

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Prioritize and Execute Approved Projects

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Project Governance Process

- Fine tuning the IT Strategic Agenda via on-going institutional alignment is a must
  - Academic Advisory Committee - AAC
  - Enterprise Systems Committee – ESC
  - Monthly Scheduled Executive Briefings
    - Provost, Associate Provost, VP of Research
    - Senior Vice Presidents
  - Ad hoc Briefings and Committee Participation
    - Cabinet, Provost, Deans, Library and others
  - Leadership of Special Interest Groups
    - College IT Professionals; Web Users, Business Analysts

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Over 120 products Supported Enterprise wide – a sample

- Ellucian ERP including HR, Finance, Financial Aid, Student, Banner Self Service, DegreeWorks, Talent Management, Luminis Portal and Advance
- Blackboard Analytics (iStrategy): Admissions, Student, Finance, HR and Financial Aid
- CBORD Transaction System (DragonCard)
- Blackboard Learning Management System
- Jenzabar (Student for Continuing Education)
- COEUS and Maximus for Research Administration

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New Products Acquired Summer 2012

- Touchnet - Sponsor Point
- Hyperion Financial Planning
- Inside Track
- Starfish
- Campus Labs
- Thompson-Reuters Incites
- Banner Integration with Employer's Edge
- Banner Integration with Empower
- Advance Web

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Priority Projects for Admissions

- Financial Aid Letters to Prospective Student Portal
- Data Streamlining – EM Process Improvement
- Redesign Application Upload Process
- Rightnow: Implement Custom Objects; Application Attributes and Model Score
- Implement duplicate recruit record merge
- Search Non-Responder Project
- Implement Banner Relationship Management
- Modifications to support Early/Regular Decision

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Priority Projects for Finance and AR

- Implement Touchnet Sponsor Point Product
- Implement Tuition Management Systems Software
- Upgrade Touchnet Banner Connect
- Upgrade Touchnet Payment Gateway, Bill and Payment Suite, Marketplace to next version
- Implement Blackboard Analytics (iStrategy) - Student Financials and Finance
- Upgrade Banner Accounts Receivable and Finance to next version

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Priority Projects for Student & Financial Aid

- Implement Inside Track
- Implement adAstra Course/Facilities Scheduling
- Implement adAstra Platinum Analytics
- Upgrade Jenzabar Higher Reach to version 4.x
- Implement Starfish
- Upgrade Blackboard Analytics (iStrategy) Student and Financial Aid Module
- Design a mechanism to effectively process Perkins and Institutional loan Promissory Notes

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Priority Projects for Student & Financial Aid

- Implement real-time integration for National Student Loan Clearing House Transcript Requests
- Upgrade Banner Student, Banner Self Service and Financial Aid to next versions
- Redesign of Web Term Master Schedule
- Enhancements to Grand - Faculty travel log
- Implement Course Leaf University Catalog
- SCDC International Co-op Studio Abroad Implementation

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Priority Projects for HR and Student Life

- Upgrade Banner Position Control and HR Modules
- Support of Ellucian Talent Management Suite
- Investigate attaching documents to EPAFs
- Implement Data and Single Sign On Integration with Empower (Voluntary Benefit Vendor)
- Implement Campus Lab's Baseline Software
- Upgrade Student Judicial Software, Pave
- Upgrade Titanium, Counseling Center Software

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Priority Projects for IA and Research

- Implement Advance Web
- Implement Advance Membership Module for Academy of Natural Sciences
- Replace MACESS with NOLIJ-to-Advance Integration
- Upgrade COEUS Research application next version

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Priority Projects for Cross-Functional Operations

- Integrate Academy of Natural Sciences into Drexel
- Implement Blackboard's new LMS, Learn
- Upgrade University's Reporting system, Hyperion
- Upgrade latest version of Ellucian Banner Modules

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Hybrid IT Priorities

- Continue Web 2.0 Initiative
- SharePoint Expansion
- Launch Platform-independent Mobile Services
- Continue Infrastructure Improvements including Wireless and Enterprise Ring
- Build Mirror Enterprise Backup Site (Phase 1)
- Implement HPC Collocation Facility (w/Provost)
- Replace ANS wired/wireless infrastructure

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